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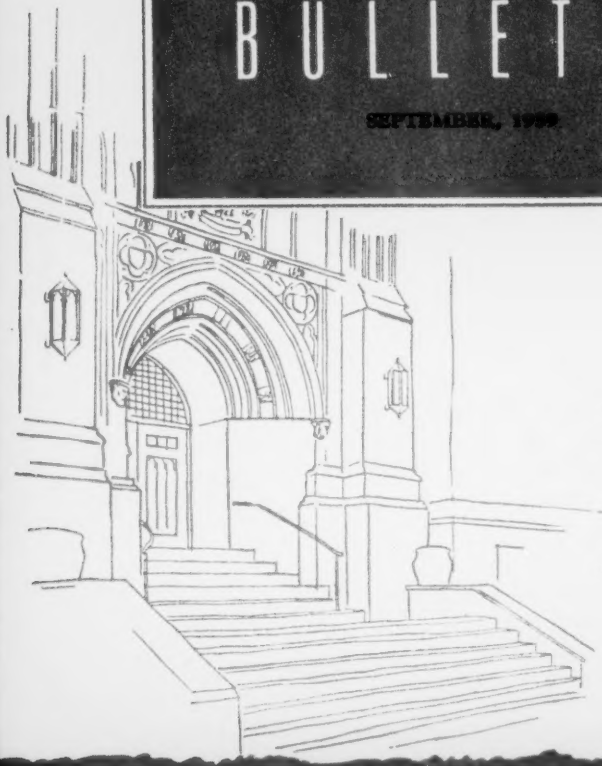

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THE Bureau of Economic and Business Research of the Temple University School of Business and Public Administration was organized to provide a vehicle for stimulating and coordinating analytical studies. Its primary objectives include (1) service to the alumni as well as to the faculty and students of the University by bringing to their attention pertinent developments in the world of business, and (2) service to business and government by making contributions to the solution of specific problems. To this end, the Bureau both carries on specialized research and publishes quarterly the **Economics and Business Bulletin**, containing some of the significant results of its current studies.

The reader's appraisal of the **Bulletin** and comments upon it are solicited. The Bureau also will appreciate receiving suggestions and requests for particular studies.

The opinions and views expressed in the articles contained in this **Bulletin** are those of the writers and cannot be construed as the official opinions or policies of the School of Business and Public Administration.

Financial and Operating Ratios for Business—A Preliminary Evaluation of Published Data

by NATHANIEL JACKENDOFF*

Ed. note: The Small Business Administration of the U. S. Government, as a part of The Program of Grants for Small Business Research, is authorized to award one grant in each state each year to promote work of value to small business. The grant for Pennsylvania was this year awarded to the Temple University Bureau of Economic and Business Research for a proposed study entitled, "An Exploratory Survey of Financial Ratios and Other Business Services, with Special Attention to Their Application to Problems of Small Business." The Bureau of Research of Duquesne University and the Bureau of Business Research at Pennsylvania State University are both cooperating in this study. Dr. Nathaniel Jackendoff has been designated as the director of this project. The following article describes some of the problems of compiling and utilizing published financial information, including the various ratios, made evident by the initial research phase of this study.

THE Bureau of Economic and Business Research of Temple University has been awarded a research grant by the Small Business Administration for the purpose of studying financial and operating ratios, with particular reference to the problems of small business.[1] The study will be of an exploratory nature, considering some of the fundamental problems in the theory, construction, and use of ratios.

Purposes of the Project

In broad terms, the major purposes of the financial and operating ratio research project may be listed as follows:

1) To determine the adequacy of available ratio data for the use of small business and the agencies or institutions with which small businesses deal, such as trade suppliers, institutional and other lenders, and investors.

2) To explore the various possibilities of supplementing published data where such appears desirable and feasible, and to devise means of encouraging existing agencies to develop or to improve available financial data.

3) To survey small business to determine the extent to which entrepreneurs or managers, themselves, understand and utilize published financial data. This may have implications for future educational programs, as well as serve to influence the form in which published data are prepared.

The purpose of this paper is to review some of the basic problems of compiling and utilizing existing financial data and the various ratios now available in published form. These have been encountered and placed in sharp perspective by the examination of the existing data as the first step in the conduct of this study.

Limitations on Types of Ratios Studied

Ratios are relationships between two numbers. There are many types of ratios of potential interest to business other than financial and operating ratios. There are ratios which include at least one item of physical data, such as "cost per man-hour" or "wage cost per ton." Among the most widely used ratios are those having to do with the security market, sometimes called "market ratios." These include at least one factor derived from other than the financial statements of the subject business, being based rather on the security unit or market quotations. Among these are ratios such as "price-earnings," "earnings per share,"

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[1]An excellent technical study was published in 1946 by the American Trade Association Executives, **Financial and Operating Ratio Surveys By Trade Associations,** Washington, D. C.

and various yield computations such as "current yield" or "yield to maturity." The present project will be concerned only with relationships derived from the two major financial statements of business, the balance sheet and the income statement.

NATURE AND APPLICATION OF RATIOS

Definitions. The most frequently used terminology classifies ratios based on accounting data into two major groups. The first of these is "financial ratios," which are expressions of key relationships between two individual items within the balance sheet or between an item in the balance sheet and an item in the income statement. An example of an intra-balance sheet ratio is the "current ratio," which relates current assets to current liabilities. A common-size balance sheet actually presents a complete set of intra-balance sheet ratios, relating each item, however, to total assets. A very large number of such combinations are possible. Examples of ratios which relate an item in the balance sheet and an item in the income statement are the "cost of sales to inventory," and "net profit to net worth." These may be termed "mixed" or "interstatement ratios."

The second group is called "operating ratios," which are intra-income statement relationships, most commonly relating individual items to the net sales. In effect, this would be a common-size form of the income statement, with net sales as 100 per cent. However, other breakdowns of the income statement are frequently encountered, such as the relationship of detailed items within operating expenses to the total operating expenses. Such detailed relationships are almost infinite in number and are especially difficult to standardize.

The Uses of Ratios

Ratio analysis may be limited to the study of relationships derived from data contained within a single firm's balance sheet and/or income statement, and the trend or pattern of such relationships over a period of time. This may be combined with comparisons of the firm's ratios to external industry criteria which have been compiled by a variety of agencies.

The internal analysis may be useful in indicating the inherent liquidity and profitability of the firm. For example, a quick measure of collection experience with receivables is available from the ratio of credit sales to trade receivables outstanding. This can be converted into the average number of days' credit sales outstanding in receivables, or what is often called the "average collection period," by dividing this ratio by 360 The result can then be compared with the firm's credit terms to gauge whether collections are fast or slow. Thus, net terms of thirty days suggest that the collection period ought not to exceed greatly this number of days. Comparison with the experience of the firm in previous periods by trend analysis will indicate whether the firm's collection experience is improving, deteriorating, or is unchanged.

It is very valuable, however, to be able to supplement the internal analysis with data typifying the current and trend experience of similar firms. While aggregated industry data should not necessarily serve as absolute criteria of what ought to be, they should serve as an aid to management in pinpointing its own objectives and operating methods and in evaluating its results. For example, if average collection experience for the industry is twenty-five days, but the firm's experience is 35 days, it would suggest that fewer of the firm's customers are discounting their purchases, and that the conversion of receivables into cash is slower for this firm than is typical for the industry. It may be, however, that the firm's profit margins are higher than the average for comparable firms, and that its turnover of merchandise is greater. This may indicate a more aggressive sales policy achieved by selling to more marginal

customers. The effects of a change in policy in this direction may be tested by comparison with industry trends in the key ratios. On the other hand, comparing firm trends with those of the industry may bring to light an unintentional deterioration of collections which requires correction. Such analysis of the firm relative to the industry will help to suggest a more careful delineation and appraisal of policy. It is this stimulation to self-analysis that marks one of the most important services of published industry data.

The actual selection of types of ratio data to develop in industry reports must be conditioned by the uses to which they are to be put. This may be entirely a matter of emphasis. It is difficult to distinguish between the types of detail that may be meaningful to management itself and to short and long-term creditors or investors. It might reasonably be assumed that management would prefer to emphasize detailed breakdowns of operating costs, but certainly management also should be concerned with some criteria of condition as shown by balance sheet data, and with the inter-relationships between balance sheet and income statement data. Basically, the objectives should be to find means of improving the ultimate earning power, while remaining sufficiently solvent to enable the owners to draw funds from the business currently after meeting all expenses.

Short-term creditors tend to emphasize the technical solvency of the business, although it would appear short-sighted on their part to rely entirely upon ability to liquidate short-term debt to the detriment of the longer-term health of the business. In this sense earnings statements and their trends should not be disregarded by the short-term creditor. On the other hand, long-term creditors and investors tend to emphasize the long-term earning power of the business, often watching only the final profits figures, and paying little attention to the details of the operating statement and showing relatively little interest in the balance sheet. Yet these are important. As pointed out by Foulke,

> "The interpretation of financial statements, no matter from what point of view, is the same, provided the analyst has obtained full essential information, provided he is qualified to make the analysis, and provided the analysis is basic and thorough."[2]

Other uses which might condition the selection of data to be presented include: 1) encouraging the use of uniform accounting procedure; 2) educating the public as to costs in a particular trade or business, thus proving helpful in dealing with government agencies such as the Internal Revenue Service, creditors, investors, and labor; and 3) aiding insurance companies in adjusting losses when individual records are incomplete.[3]

Selection of Key Ratios

Main Sources of Published Ratio Data. There are several private organizations which periodically publish financial or operating ratios for a variety of industries. The most prominent of these are Robert Morris Associates, Dun & Bradstreet, and the Accounting Corporation of America. There are also a large number of trade associations each of which publish ratios for its own industry. In addition, there are special industry studies by universities, trade journals, accounting service firms, and management consultants. A certain amount of work based on the published financial reports of listed corporations is prepared primarily for the use of investors by investment advisory and statistical services. For purposes of this study these have been disregarded.

United States government agencies originate a limited amount of ratio data. These include the Quarterly Financial Reports for U.S. Manufacturing Corporations, jointly published by the Federal

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[2]Roy A. Foulke, **Practical Financial Statement Analysis**, third edition, McGraw-Hill Book Company, New York, 1953, p. 44.

[3]American Trade Association Executives, **Financial and Operating Ratio Surveys By Trade Associations**, Washington, D. C., 1946. Objectives of ratio surveys are stated in more detail than above.

Trade Commission and the Securities Exchange Commission, and some special studies by the Department of Agriculture. A great deal of basic data from which ratios can be derived are available, particularly from publications of the Bureau of the Census and the **Statistics of Income** series of the Internal Revenue Service. Methods of analyzing these data are very ably discussed in a forthcoming publication of the Office of Distribution in the Department of Commerce.[4]

In addition, much information, published by public utility commissions and private associations, can be found on industries subject to detailed financial regulation. In Canada, the Industry and Merchandising Division of the Dominion Bureau of Statistics publishes annually or biennially financial and operating ratios for a group of over twenty wholesale and retail trades.

Robert Morris Associates, located in Philadelphia, is the National Association of Bank Loan Officers and Credit Men. Its **1958 Statement Studies** is the thirty-seventh annual publication in this series. It covers 173 lines of business, and is based on primary data collected from more than 500 cooperating member banks of the Association. The studies are distributed to members and are also available on a fee basis to others.

Dun & Bradstreet, Incorporated has been publishing its "Fourteen Important Ratios" annually since 1932 in **Dun's Review and Modern Industry**, a monthly magazine. Subsequently, they appear as a part of a pamphlet on some topic of interest to business, the latest of which, by Roy A. Foulke, **Current Trends in Terms of Sale**, includes ratios for the year 1957. The data are essentially a by-product of Dun & Bradstreet's very extensive financial reporting services. The latest report covers 72 lines of business activity consisting of 36 manufacturing industries, 24 wholesaling industries, and 12 lines of retailing. In addition to the annual reports, Dun & Bradstreet publishes intermittently special studies on the **Cost of Doing Business** for a number of retail industries. The National Credit Office, an affiliate of Dun & Bradstreet, also publishes a number of intermittent reports on the industries in which it specializes.

The Accounting Corporation of America publishes, semi-annually, The **Mail-Me-Monday Barometer of Small Business.** Its data are derived as a by-product of the Accounting Corporation's accounting services to clients throughout the nation. The 1958 yearbook covers 51 types of small business, primarily retail and commercial service groups, and several professions, such as medicine and dentistry.

Considerable effort has gone into the development of financial and operating ratios by national and, in some cases, by regional and local trade associations. The detail of such reports varies greatly, but they are often the only source of ratio information for the particular industry. Practices are somewhat varied in releasing reports, but, in response to requests for such material the project study group has received relatively few replies which specified that the data were confidential.

Types of Ratios Published. Robert Morris Associates presents common-size balance sheets and eleven financial ratios, as well as a very condensed set of operating ratios related to sales, for each of the industries covered in the main portion of its studies. In an "Income Supplement," it provides somewhat more detailed operating ratio data. Dun & Bradstreet's "Fourteen Important Ratios" are all, except for the ratio of "net profit to net sales," financial ratios. The Accounting Corporation's series include "inventory turnover" as the only financial ratio, the remainder being operating ratios based on sales. However, this agency does work out "typical" balance sheets in dollar terms from which intra-balance sheet financial ratios can be computed. Various individual industry stud-

[4]The title of this study will be: **Guides For Business Analysis And Profit Evaluation.**

ies, whether by trade associations or others, are very diverse in their coverage of ratios, although there is a tendency to concentrate a great deal more on operating than on financial ratios.

There are eighteen ratios in use by Robert Morris Associates and Dun & Bradstreet, as well as in the more occasional studies by the National Credit Office, excluding the ratios which are directly available in common-size balance sheets or income statements.[5] A 1946 study of twenty-six trade associations showed, in addition to all of these, another thirteen ratios. An as yet incomplete review of trade association reports received in connection with this research project reveals at least another twenty ratios. In a pamphlet published by the Small Business Administration, the list of financial ratios is simplified to include only nine.[6]

It is a basic principle of any kind of theoretical analysis and presentation that it should be done in the simplest way possible. What is "simple" is clearly relative to the situation. Certainly, however, it is difficult to justify calculations which add nothing to an analysis, just for the sake of showing additional figures. Every ratio relationship, whether standing alone or in combination with other ratios, should have a meaning to the analyst.

The proliferation of ratios may be justified in certain industries because of their special problems. For example, an industry with substantial notes receivable as well as accounts receivable might reasonably work out ratios detailing each of these items. Adaptation of ratios to each industry might well, in fact, be desirable. In this respect, trade associations have a special advantage over such organizations as Robert Morris Associates and Dun & Bradstreet, which are unspecialized, in their ability to adapt ratio analysis to the needs of their particular industries.

Need for Selective Publication and Careful Interpretation. Perhaps the most harmful use of ratios arises from their mechanical application or careless interpretation. An illustration of this may be cited from a report published for regional members of a particular industry. The report points out that the important determinants of the "return on invested capital" are: 1. net profit per dollar of sales; 2. inventory turn-over; and 3. the ratio of inventory to invested capital. The term "invested capital" is not clearly defined, but appears to mean "total operating assets." The derivation of "return on invested capital" from these three relationships may be demonstrated as follows:

$$\frac{\text{Net profit}}{\text{Net sales}} \times \frac{\text{Net sales}}{\text{Inventory}} \times \frac{\text{Inventory}}{\text{Invested capital}} = \frac{\text{Net profit}}{\text{Invested capital}}$$

In this formulation it will be noted that "Net sales" and "Inventory" cancel out, leaving net profit on invested capital.

The report presents the essential figures as follows:

Sales	$522,064	100.00 %	
Net profit	$ 21,604	4.14 %	(of sales)
Sales to invested capital	2.92 times		
Invested capital	$178,965	100.00 %	
Inventory to begin	68,563	38.31 %	(of invested capital)
Profit on inventory investment	4.14 × 38.31	1.586%	(?)
Profit on capital investment	1.586 × 7.61	12.07 %	
To prove above figure	$21,604/$178,965 =	12.07 %	

[5]The list also avoids counting as two separate ratios those which are simply the inverse of one another, such as sales to receivables and receivables to sales. It also excludes as double counting, the collection period in days which is essentially another way of expressing the receivables to sales relationship.

[6]Richard Sanzo, **Ratio Analysis for Small Business,** Small Business Administration, Small Business Management Series No. 20, Government Printing Office, Washington, D. C., 1957, p. 6.

The first criticism is that, in the process of deriving the final figure of "profit on capital investment," the computation of "profit on inventory investment" is a purely artificial number having no relationship to any common sense interpretation of the heading. The actual profit on inventory investment, based on the available figures, should be computed as: $21,604 (net profit)/$68,563 (inventory = 3.2%. One can see the derivation of the listed per cent (1.586%) by tracing through the formula given above, in its application to the data:

(1) $\frac{\text{net profit}}{\text{sales}} = \frac{21,604}{522,064} = 4.14\%$

TIMES

(2) $\frac{\text{sales}}{\text{inventory}} = \frac{522,064}{68,563} = 7.61$ times or 761%

TIMES

(3) $\frac{\text{inventory}}{\text{invested capital}} = \frac{68,563}{178,965} = 38.31\%$

EQUALS

Profit on capital investment = 12.07%

OR, ALTERNATIVELY,

.0414 X .3831 = .01586 = 1.586%

AND

.01586 X 7.61 = .1207 = 12.07%

The second and more serious criticism of the same report relates to the misleading and mechanistic interpretation of the ratios. The report suggests that, the higher the proportion of inventory to invested capital, the higher will be the profit on total invested capital, the final result toward which the businessman strives in his management of assets. It goes on to cite the example of several very successful firms which lease, rather than own, their buildings and major equipment, and suggests that if members of the industry group had had 70% of their invested capital in inventory, rather than the 38.31%, the return on invested capital would have been 22% and not 12%.

Reference to the formula shows, however, that a change in the inventory or sales figures alone will have no effect on the profit to capital invesmtent ratio, since sales and inventory appear in both the numerator and the denominator, and any change in these items will therefore cancel out. The significant question then becomes one of the effect of any given change in operations on the dollar profits or on the dollar value of capital investment.

A reduction of fixed plant and equipment by means of sale-and-leaseback and the diversion of the funds so acquired into inventory would leave the denominator unchanged, but would increase the ratio of inventory to invested capital. However, the result would not be to increase profits unless leasing were less costly than owning, or the diversion of funds into inventory made possible a more effective exploitation of the market such that profit margins were improved.

The considerations involved here are quite complex. Increased inventories unaccompanied by at least a corresponding increase in sales might well result in increased carrying costs and lower profits. Also, there need be no reduction in costs when plant or equipment are leased rather than owned. Leasing charges must cover not only depreciation, but a return on the lessor's investment, and might or might not include maintenance and other charges in connection with the property, depending upon the leasing contract. Tax effects must also be carefully reviewed. Ultimately, it is the impact on costs and profits that is significant.

Conceivably the inventory to invested capital ratio might be improved by using the funds released by sale-and-leaseback to increase the liquidity of the business through a build-up of cash and receivables or by a reduction of current debt. Or the commitment of funds to the business might be reduced by liquidating long-term debt or reducing ownership capital. These alternatives also require careful consideration before decisions are made.

Certainly, the superficial and mechanistic interpretation of a single ratio, in isolation from the whole of which it is only a part may well be to mislead or confuse. Mechanical and indiscriminate use of ratios, especially when in print, may do more harm than good.

BASIC PROBLEMS IN THE COMPILATION OF PUBLISHED RATIOS

Given the most ideal compilations of industry data, there are bound to be some misuses of it. But, in terms of actual sequence, the problems really begin with the compilation of the data. The basic problems center around the following areas: 1) the universe selected for sampling; 2) the sampling within the given universe; 3) the measures of representativeness used in presenting the results; 4) the timing of the data; 5) the use of accounting definitions and classifications; and 6) the computation of mixed or interstatement ratios.

The Definition of the Universe

When ratios are being compiled and aggregated for meaningful use, it is essential that the user know whether they are applicable to his particular firm, and what the limits of their applicability are. Typical of the questions that might be asked are: 1) To what industry do the data apply? 2) What size firms do the data cover? 3) Are the data intended to represent all firms in the nation, or are they based on some special regional sample? 4) Are they equally applicable to individual proprietorships, partnerships, and corporations?

The universe may be very broad or extremely narrow. The types of classifications of the data can, obviously, go far beyond those enumerated. Some of these problems are discussed below.

Industry Definition. The first decision to be made in preparation for compiling ratios is that of defining the industry in terms that will limit selection to firms producing the same commodity or service or combination of commodities or services. This becomes, in actual application, a matter of degree of refinement of the concept "similar."

The most convenient guide for defining industries in the United States is to be found in the **Standard Industrial Classification Manual.**[7] With some exceptions, it is possible to define published data in terms of explicitly assignable SIC classifications, although sometimes it is apparent that they are even more refined than the smallest breakdown in the manual, or sometimes may cross two or more classifications.[8]

Robert Morris Associates compiles ratios for "Iron and steel foundries" (SIC 332) and for "Non-ferrous foundries" (SIC 336). Dun & Bradstreet, on the other hand, compiles ratios for "Foundries," which can be described only as a combination of the two Robert Morris industry categories. That it is important to distinguish between the two types of foundries is best brought out in a comparison of ratios for 1957, as prepared by Robert Morris Associates:

Ratio	Iron and Steel foundries	Non-ferrous foundries
Current assets to current liabilities	2.52	2.22
Tangible net worth to fixed assets	1.93	2.66
Tangible net worth to debt	2.37	1.88
Sales to receivables	13.05	12.48
Cost of sales to inventory	7.16	7.18
Sales to tangible net worth	3.04	4.74
Per cent of profits to tangible net worth	10.16	3.45
Sales to total assets	2.14	3.09
Per cent of profit to total assets	7.15	2.25

The differences between the ratios for the two types of foundries suggest that if a firm specializes in one type of foundry operation, the Robert Morris break-

[7]Executive Office of the President, Bureau of the Budget, **Standard Industrial Classification Manual,** U.S. Government Printing Office, Washington 25, D. C., 1957.

[8]For example, within the major manufacturing group of industries entitled "Primary Metal Industries", a "two-digit" industry, we find the following type of classification:

33. Primary Metal Industries
    - 331. Blast furnaces, steel works, and rolling and finishing mills
        - 3312. Blast furnaces (including coke ovens), steel works, and rolling mills
        - 3313. Electrometallurgical products
        - 3315. Steel wire drawing and steel nails and spikes
        - 3316. Cold rolled sheet, strip, and bars
        - 3317. Steel pipe and tubes

Including the 331 group above, "Primary Metals" has seven three-digit industries and twenty-three four-digit industries.

downs would be especially useful. On the other hand, if the firm operates both types of foundries, the Dun & Bradstreet data would probably be more useful.

The very fact that various compilers of data may choose to vary their definitions of the industry can be a source of considerable confusion to the ultimate user. An example which indicates the way in which the analyst might face some uncertainty in actual choice of available data exists in the classification "Women's, Misses' and Juniors' suits, Skirts, and Coats, except for fur coats and raincoats" (SIC 2337). The Dun & Bradstreet title is "Coats and suits, women's," whereas the Robert Morris Associates title is "Women's coats and suits, skirts, and sportwear." They are not clearly definable as representing the same universe, but appear similar.

Size of Firm. The criterion of size provides another basis for defining the universe. There are no size categories specified in the Dun & Bradstreet annual compilations of the "fourteen important ratios." There is, however, a preliminary note to the ratios to the effect that the businesses used in the compilations generally have a tangible net worth of $75,000 or more. It is estimated that these come from the top 8.4 per cent of the industrial and commercial business concerns measured by the size of their investment.[9] On the other hand, in their **Cost of Doing Business** retailing studies, establishments are grouped by sales volume, the particular size categories varying with the industry. Illustrations of the size categories used in several of these studies are listed below:

1) Paint and wallpaper stores, 1956
   a) under $30,000
   b) $30,000 to $50,000
   c) $50,000 to $100,000
   d) $100,000 and over
2) Candy, nut, and confectionery stores, 1955
   a) under $20,000
   b) $20,000 to $35,000
   c) $35,000 and over
3) Children's and infant's wear stores, 1957
   a) under $50,000
   b) $50,000 to $100,000
   c) $100,000 and over
4) Package liquor stores, 1955
   a) under $50,000
   b) $50,000 to $75,000
   c) $75,000 to $150,000
   d) $150,000 and over

Robert Morris Associates uses a standardized size breakdown for all of its **Statement Studies**, based on total asset size:

1) under $250,000
2) $250,000 to less than $1,000,000
3) $1,000,000 to less than $10,000,000
4) $10,000,000 to less than $25,000,000 (for eleven industries in the 1958 **Statement Studies.**)
5) all sizes

Firms exceeding $25,000,000 in asset size are not included in the sample.[10]

Selecting one retail store type from among the Robert Morris compilations in order to compare its smallest size grouping with that indicated in the **Cost of Doing Business** survey, brings forth an interesting disparity. In Robert Morris' "Wines, liquor, and beer" retail category of stores within the $250,000 asset size, 25 establishments are covered with total sales of $9,651,000, averaging about $385,000 net sales per establishment. The "typical" (median) net sales per concern in the largest category of the **Cost of Doing Business** survey of "Package liquor stores" for 1955 was $243,970.

One might question whether the more detailed size breakdown in the latter survey was significant. Examination of the ratios by "net sales" groupings, as shown in Table 1, can leave little doubt that, for one wishing to learn the financial characteristics of comparable firms,

[9]Roy A. Foulke, **Current Trends in Terms of Sale**, Dun and Bradstreet, Inc., N. Y., 1959, p. 45.

[10]Instructions to participating banks specify this.

TABLE 1

Operating Ratios for Package Liquor Stores Grouped by Net Sales Volume, 1955

	Under $50,000	$50,000 to $75,000	$75,000 to $150,000	$150,000 and Over
Number of Concerns	50	70	89	68
Typical Net Sales per Concern	$38,900	$64,270	$98,590	$243,970
Net Sales	100.0%	100.0%	100.0%	100.0%
Cost of Goods Sold	79.1	79.4	80.4	82.7
Gross Margin	20.9	20.6	19.6	17.3
Expenses—Owners' Compensation	10.7	9.3	6.5	4.5
Employees' Wages	0.2	2.7	3.2	4.0
Occupancy Expense	3.9	3.4	2.8	2.2
Advertising	0.3	0.2	0.4	0.6
Delivery Expense	0.0	0.1	0.4	0.4
License Fees	1.6	0.9	0.7	0.5
All Other Expense	2.5	3.0	2.1	2.2
Total Expense	19.2	19.6	16.1	14.4
Net Profit Before Income Taxes	1.7	1.0	3.5	2.9
Net Profit on Net Worth (%)	5.4	3.4	10.8	13.5
Net Worth Turnover (per year)	4.0	4.1	4.2	6.0
Inventory Turnover (per year)	5.8	6.0	5.8	6.6

Source: Elmer T. Sivertsen, **Package Liquor Stores, Operating Results in 1955,** "Cost of Doing Business," Survey by Dun & Bradstreet, Inc., New York, 1956.

the more detailed size classification is very important.[11]

Regional and Other Locational Comparisons. It would appear desirable to make some sort of regional comparisons available to the analyst. Differences may exist between the financial reports of businesses because of distances from suppliers and customers, differences in wage structure, differences in season or in longer-term economic trends as between major areas, or differences in the specific type of product within a particular industry because of climatic differences, customs, or income levels. The particular categories chosen for analysis of regional differences in ratios may follow broad regional lines such as: Northeast, Middle West, South, Far West, or be distinguished by location with regard to type of shopping area such as "downtown, neighborhood, suburban, and rural." Referring again to the **Cost of Doing Business** study on "Package Liquor Stores," Table 2 reproduces its

[11]Although the title of the **Cost of Doing Business** survey might appear to be more restrictive than that of Robert Morris, the text of the study states that, "Each concern obtained at least 75 per cent of its total volume from the sale of **wines, liquors** and **beer,**" thus making the two compilations directly comparable, except for date.

TABLE 2

Operating Ratios for Package Liquor Stores Grouped by Geographic Location, 1955

	North East	Middle West	South	Far West
Number of Concerns	97	70	70	40
Typical Net Sales per Concern	$92,500	$68,820	$84,725	$82,430
Net Sales	100.0%	100.0%	100.0%	100.0%
Cost of Goods Sold	78.6	81.3	82.7	76.8
Gross Margin	21.4	18.7	17.3	23.2
Expenses—Owners' Compensation	8.4	7.3	7.0	8.1
Employees' Wages	3.0	2.3	3.2	3.8
Occupancy Expense	3.1	3.2	2.3	3.3
Advertising	0.5	0.3	0.2	0.4
Delivery Expense	0.7	0.0	0.0	0.2
License Fees	0.7	0.8	1.1	0.9
All Other Expense	2.4	1.9	1.8	3.4
Total Expense	18.8	15.8	15.6	20.1
Net Profit Before Income Taxes	2.6	2.9	1.7	3.1
Net Profit on Net Worth (%)	8.0	10.6	7.5	11.7
Net Worth Turnover (per year)	4.1	5.1	5.1	4.2
Inventory Turnover (per year)	5.4	6.6	6.7	5.6

Source: Elmer T. Sivertsen, **"Packaging Liquor Stores, Operating Results in 1955,"** Cost of **Doing Business,** Survey by Dun & Bradstreet, Inc., New York, 1956.

comparison of operating ratios among four major regions of the United States.

Regional data are seldom available. The Accounting Corporation of America, in its **Mail-Me-Monday Barometer of Small Business,** 1958 yearbook edition, gives a geographical analysis of operating ratios for three out of about fifty retail and service industries on which operating ratios are presented.

In some cases, regional or local trade associations develop data for their own areas. This is particularly evident in the lumber industry. National trade associations frequently present such breakdowns.[12]

Other Types of Universe Definition. The classifications of data may take a great variety of forms, the significance of each of which must be determined individually according to the nature of the industry and the purpose for which they are presented. The distinction according to legal form of business organization may be especially important because of the essentially different accounting arising primarily from differences in liability and tax treatment. For those seeking to compare characteristics of profitable as against non-profitable establishments, such a classification of data is easily enough accomplished, given the availability of the initial data. This is done in Dun & Bradstreet's special **Cost of Doing Business** studies. Where credit or delivery policies may be crucial issues, data may be worth classifying on these bases.[13]

[12]From among a group of 82 industry reports which develop ratio data, twenty-seven showed regional or locational breakdowns. These represent only those which have been made available to the Temple University Research Project Group at this writing. They include a number of reports compiled by private groups other than trade associations.

[13]Types of classifications of data in the **Package Liquor Stores** study previously cited: 1) by delivery policy, 2) by gross margin earned, 3) by merchandise line, 4) by sales volume, 5) by per cent of net profit, 6) by geographic location. Other classifications to be found among the various **Cost of Doing Business** studies are: 1) by legal form of ownership, 2) by type of customer, 3) by age of store.

The Problem of Sampling Within the Universe

Representativeness of the Sample. Once the universe has been defined, there remains the question of whether the primary data which have been obtained are reasonably representative of that universe. For example, the data which have been gathered by Robert Morris Associates for the use, primarily, of bank lending officers, are based entirely upon financial statements selected from their files by member banks of the association in conformity with size and product standards indicated in the instructions. Since continuity is sought in the data from year to year, the data are based upon a sample of firms which are regular bank customers. It is reasonable to question the representativeness of such a sampling if it is intended to depict typical firms in the industry as a whole. Although the data are classified by size, there is no direct effort to obtain comparable size samples in each size category used. Those size categories best represented in bank credit files may be expected to be most adequately sampled in the Robert Morris data.

In the case of the Accounting Corporation of America, its statistics are based entirely upon those firms which prefer or require the services of an outside accounting firm. The bias in favor of small-size firms is quite evident, and is given explicit recognition in this published data. Where special ratio studies are undertaken by trade associations or other groups based upon voluntary responses to detailed questionnaires, the response pattern may be a biased one within the originally sampled group. Within trade associations, it is quite possible that the membership is not entirely representative of industry patterns, yet the survey may include only association members. The bias would be conditioned by the pattern of association membership and by the response pattern. This might be in favor of more stable and successful firms. There are, it might be noted, some differences among trade association

surveys in this respect according to a 1946 study. Most of them do restrict the survey to members.[14]

The very nature of the data required for compilation of typical financial and operating ratio studies imposes limitations upon the availability of data, especially to private groups. The confidential character of financial reports of most private business establishments will tend to limit their accessibility to reporting agencies. This explains why most such data are available only through special membership groups, or as by-products of other functions.

Accuracy of the Sample. The very bias that is evident in the Robert Morris data is also a source of strength in terms of the accuracy of the financial data, since banks tend to insist upon audited statements more than most other agencies, and are better qualified to judge the accuracy of the statements because of a continuing relationship with the borrowers whose statements are included in the samples.

These problems of representativeness and accuracy of sample are two of the most insidious facing the user of data who, presumably, has already been alerted to the definition of the universe. They introduce biases implicitly, which the compiler and user may not recognize. They may impair the actual validity of the data unless the inaccuracies in the samples are of such a type that they may be relied upon to offset one another. Clarification of these issues would represent a major step forward in the compilation of ratios.

Measures of Representativeness

Given the universe to be analyzed, and assuming a representative and accurate sample, the problem of aggregating the data and presenting it to the user in meaningful form is an important one.

Median and Distribution Measures. One method is to rank the data and publish the median (or middle item) as typical of the group. To show the dispersion of the data around the median, one might also publish quartiles or some other percentile distribution. Dun & Bradstreet uses an inter-quartile range in publishing its "Fourteen Important Ratios." For example, among a sample of 200 hardware wholesalers in 1957 the ratio of "current assets to current debt" is shown as follows:

Upper Quartile ..... 6.23 times
Median ..... 3.92 times
Lower Quartile ..... 2.39 times

A hardware wholesaler wishing to compare himself with the industry, having computed his current ratio to be 2.25, may conclude that he is in the lowest quartile, with more than 75 per cent of the industry (assuming that the sample is representative of the entire industry, which is not so in the Dun & Bradstreet figures) doing better than he in this respect. If his ratio were 3.89, he could conclude that he is doing about as well as half of the firms in the industry. If his ratio were 6.40, he would know that it was above that of at least 75 per cent of the firms in the industry. Several trade associations have adopted this method of presentation, although they appear to be in a very decided minority.

Ratios Computed Directly From Dollar Aggregates. In this case, for example, in order to compute the current ratio the compiling agency would add the current assets of all the firms in the sample, add the current liabilities of all the firms, and then relate the dollar totals to one another. This is the method used by Robert Morris Associates. Although they give a size breakdown, within any given size category, the firms with the largest dollar figures would carry the most weight. Thus a firm with current assets of $200,000 and current liabilities of $60,000 would carry more weight than the combined figures of five firms averaging current assets of $15,000 ($75,000 total) and current liabilities of $8,000 ($40,000 total). One may reasonably consider such a presen-

[14] American Trade Association Executives, **Financial and Operating Ratio Surveys By Trade Associations**, Washington, D. C., p 15.

tation as being "distorted" by the weight of the largest firms in the sample. The method has the obvious and important advantage, from the viewpoint of expediency, of being both inexpensive and speedy. National Credit Office tries to avoid distortions by arbitrarily eliminating from the aggregates any unusually large or small firms. Beyond this, however, they aggregate the dollar figures, and average them to arrive at typical balance sheet and certain income statement figures.

Arithmetic Averages of Individual Firm Ratios. The simplest way to eliminate the distortion indicated above is to compute the current, and other, ratios for each firm, and then compute their arithmetic average. Although the average may be pulled in one direction or another by an unusually high or low item in the group, the final result is likely to be more "typical" of the firms in the industry.[15] When the ratios are computed individually for each establishment, it is obviously a very much more expensive and time-consuming operation than simply to compile dollar aggregates from which a single set of computations need be made. The development of modern computers should, however, break down the barrier to the more elaborate derivation of results.

Other Presentations. In the course of a review of special industry reports, several other interesting presentations have come to light. One association, faced with a relatively small number of returns, plotted each of them and worked out a regression equation to show a calculated relationship among various items in the income statement. The calculated figures were then used rather than the actual observations.[16] Another association, despite its relatively large number of returns, not only summarized the data in aggregate form, but listed the complete returns for each company.[17] This detail is extremely interesting, for it enables the user to compare his own ratios with the integrated ratio patterns of other firms. For example, does a firm the current ratio of which compares favorably with the average necessarily find that it compares similarly with regard to all the other ratio averages listed? The usual presentation, in computing each "typical" ratio independently, may lose sight of patterns, or typical relationships among ratios.[18]

Timing of The Data

There are several issues to be considered under the problem of timing of the data. The first of these is the problem of the fiscal year in use among sampled firms. The second issue is that of the frequency and recency of published data necessary for its useful application.

The Fiscal Year. Many recommendations exist as to the proper dating of the fiscal year. Apart from the use of the calendar year, which would provide uniformity for all businesses, the most prominent suggestion emphasizes the desirability of a functional, or "natural" business year, especially in seasonal industries. This would ordinarily end at the lowest point in the year's operations. Presumably, at this point, inventory would have been reduced to a minimum and receivables would be close to their ebb. At this point, too, because of the liquidation of these items and their conversion into cash, short-term debt should have been liquidated or be close to its low. As a consequence, most of the financial ratios should look their best. For example, the parallel reduction of current assets and current liabilities should improve the current ratio (assum-

[15]Measures of deviation from the arithmetic mean may be derived for a more technical and more useful presentation.

[16]Prepared by George D. Wilkinson Co. for the National Builders' Hardware Association, January 1958.

[17]American Steel Warehouse Association, "Company Operations & Operating Ratios in 1958." It may be noted that individual companies are not identified in this study.

[18]Other techniques reported in a 1946 survey were the "medial average", centered between the median and the arithmetic mean, and the mode. American Trade Association Executives, **op. cit.**, p. 26. Also encountered was an arithmetic average of the interquartile, or "middle half" group, thus eliminating extremes.

ing an initial ratio in excess of one-to-one); the liquidation of inventories should make the quick ratio (cash and receivables to current liabilities) appear at its best; the low inventory position should improve inventory turnover figures where based on either end-of-the-year or the average of beginning and ending inventories; the liquidation of most receivables should give the impression of a rapid collection.[19] For non-seasonal industries, the issue would hardly appear to be so significant.

As a matter of fact, fiscal years within given industries are far from standardized. In the period July 1956-June 1957, almost half of the corporate tax returns to the U.S. Internal Revenue from manufacturers of textile mill products were based on other than the calendar year as illustrated in Table 3.

TABLE 3

Distribution of Income Tax Returns of Corporations Manufacturing Textile-Mill Products, According to Month in Which Annual Accounting Period Ended, July 1956 to June 1957[1]

Total number of returns	5528
Number of returns with calendar year and part year periods	2841
Total number of returns with non-calendar year periods	2687
Percentage distribution of non-calendar year returns, by month:	
July	6.8 per cent
August	9.0
September	13.1
October	7.7.
November	8 0
January	5.3
February	5.8
March	11.5
April	9.1
May	3.7
June	20.0
Total, non-calendar year	100.0

Source: United States Treasury Department, Internal Revenue Service, **Statistics of Income . . . 1956-57, Corporation Income Tax Returns, with Accounting Periods ended July 1956-June 1957,** Internal Revenue Service Publication No. 16(3-59), Government Printing Office, Washington, D. C., 1959, pp. 62-68.

[1]These statistics are computed from the column showing "Total assets".

From the viewpoint of the compiler of the data, the real difficulty in this respect arises from the fact that, unless the financial statements being aggregated are dated the same, the impact of seasonal differences among the statements will distort the final results. In practice, it may be too difficult to obtain uniform dating on enough of the returns to make it feasible. Some trade associations, according to a 1946 survey, require their members to submit financial statements on a calendar year basis, regardless of the member's own fiscal closing date.[20]

Such control over responses is not, however, available to such organizations as Robert Morris Associates or Dun & Bradstreet which obtain their data essentially as by-products rather than through a formal survey of participants. Consequently their published ratio data tend to be compromised on this issue. Thus, for example, the Robert Morris Associates instructions to cooperating banks for the 1958 **Statement Studies** ask them to include only those companies with the fiscal year ending between June 30, 1958 and March 31, 1959. In most cases, since the calendar year dating is predominant among the samples submitted, the final aggregates are dated as follows: "Year Ended On Or About December 31, 1958." In some cases, such as "Tobacco leaf," where the most frequent date encountered is June 30, the published ratios list this as the approximate date. Beyond this, however, to assure adequacy of the sample, there is no attempt to exclude submitted data because of significant departure from the listed date.

From the viewpoint of the user of such data, especially in an industry with wide seasonal fluctuations, the ambiguity of the dating may be a severe shortcoming. A further complication in dollar aggregated data such as that of Robert Morris Associates exists in that certain dates may impose an extremely heavy influence on the final results because of

[19]Quite apart from strong cyclical or growth trends, the sale or cost of sales figure in the turnover ratios should remain constant so that seasonal movements reflected in the balance sheet will be sensitively portrayed in the ratios.

[20]American Trade Association Executives, **op. cit.,** p. 24.

TABLE 4

Fourteen Important Median Ratios for the Breweries Industry, 1953-1957, and Related Index Numbers, Computed as Percentages of 1957 Ratios

	1953		1954		1955		1956		1957	
	ratio	index	ratio	index	ratio	index	ratio	index	ratio	index
Current assets to current debt (times)	1.89	100	2.21	117	2.20	116	2.32	122	2.71	144
Net profits on net sales (per cent)	2.92	100	2.07	71	1.52	52	1.32	45	2.52	90
Net profits on tangible net worth (per cent)	6.89	100	4.99	72	3.19	46	3.14	45	5.58	82
Net profits on net working capital (%)	25.65	100	20.90	82	9.60	36	10.26	40	15.37	60
Net sales to tangible net worth (X)	2.52	100	2.46	94	2.51	96	2.35	90	2.36	90
Net sales to net working capital (X)	9.82	100	10.13	103	9.99	102	8.27	85	8.26	84
Collection period (days)	15	100	17	114	20	133	23	154	18	120
Net sales to inventory (X)	16.1	100	15.2	95	18.8	117	19.3	120	19.5	122
Fixed assets to tangible net worth (%)	72.1	100	77.8	107	76.0	104	66.9	92	68.5	95
Total debt to tangible net worth (%)	38.2	100	41.8	110	40.9	107	32.0	84	33.4	88
Current debt to tangible net worth (%)	24.5	100	22.0	90	23.4	95	22.2	91	18.5	76
Inventory to net working capital (%)	65.4	100	58.4	89	50.0	72	50.8	78	46.8	72
Current debt to inventory (%)	157.0	100	148.4	94	175.3	112	165.7	105	129.0	82
Funded debt to net working capital (%)	57.6	100	46.5	81	60.3	104	53.9	94	44.2	77

Source: Roy A. Foulke, **Current Trends in Terms of Sale,** Dun & Bradstreet, Inc., 1959, New York, pp. 64-65. Index numbers were computed from the ratio data given in this source.

the unusually large size of the firms the statements of which occur on those dates. The answer may be, partially, to indicate explicitly the number of statements for various dates. Given an awareness of the weight of variously dated statements in the aggregate results, the analyst may be able to allow for any differences between the individual establishment's ratios and those of the aggregate.[21]

Recency of Published Data. The second major problem that may arise in connection with the timing of the data has to do with its recency. To what extent may changing business conditions and changing industry characteristics affect the value of the data over time? One might test the importance of this problem by comparing the ratios for a given industry over a period of several years. This is done in Table 4, using Dun & Bradstreet's "Fourteen Important Ratios" for the Breweries Industry for the period 1953 to 1957, inclusively. The actual ratios and an index of the ratios based on 1953 are shown.

The breweries industry was selected entirely at random, but certainly it would suggest that ratios bear a significant relationship to changing conditions, very considerable changes possibly taking place from one year to the next as well as over longer periods. This, it would seem, emphasizes the need for continuous and regular surveys.[22]

[21]The annual Dun & Bradstreet "Fourteen Important Ratios" fails to indicate explicitly the range of dates of the statements included. The Accounting Corporation of America's **Mail-Me-Monday Barometer of Small Business,** in a number of instances, presents operating ratios on a monthly, as well as on an annual basis, but does not date its "typical" balance sheets. Thus, the same ambiguity exists here. As pointed out above, the seasonal problem is most serious for the balance sheet and the mixed ratios.

[22]An interesting aspect of regularly published data might be the possibility of developing studies of ratio trends and patterns in particular industries for forecasting and budgeting purposes.

The Use of Accounting Definitions and Classifications

One of the most serious problems encountered in the compilation and use of ratios has been that of comparability in the basic financial statements from which ratios are derived, as well as in the classification of data within statements.

The difficulty that might be encountered comes to the fore in the following comparison of operating ratios for the same industry and year, compiled by two different organizations:

Source A	
Net sales	100%
Cost of sales	91.71
Gross profit	8.28
Selling and delivery expense	4.09
Officers' salaries	0.60
Other general administrative expenses	2.07
All other expenses, net	0.44
Profit before taxes	1.07
Income taxes	0.54
Net profit	0.52

Source B	
Total sales	100.0%
Cost of raw materials	73.6
Gross margin	26.4
Wages and salaries	13.0
Supplies and containers	4.1
Transportation	2.6
Taxes	1.1
Depreciation	0.7
Interest	0.2
Other expenses	4.0
Total operating expenses	25.7
Total earnings	0.7

It is interesting that, in this particular case, the profits after taxes as a per cent of sales were so close, in view of the discrepancies among the detailed individual items. Without quite detailed accounting instructions, it would be rather difficult to compare the internal items in the above statements.

Partially, this has been a matter of varied definitions for the same terms. Thus, for example, "invested capital" has been found to refer to: 1) paid-in capital, 2) net worth, 3) net worth plus long-term liabilities, 4) plant and equipment, 5) total assets. In connection with the last two, plant and equipment may be valued at original cost, thus eliminating adjustments for depreciation, or net. Similar problems may exist where it is not clearly indicated whether a "receivables" ratio is net of reserve for bad debts, or whether a "net worth" ratio is based upon "tangible net worth." The differences may, of course, be considerable. We will not, in this paper, involve ourselves in the question of preferred practice in all of these cases. As already pointed out, practices vary. It is important, however, to define the terms of the ratio carefully, an ideal which is frequently breached.

Computation of Mixed Ratios

Another type of problem of definition arises, particularly in computing mixed ratios, which relate an item in the balance sheet to one in the income statement. For example, in deriving the collection period for receivables, some use the average of beginning and ending receivables, some use only ending receivables, and conceivably one might use the monthly average of receivables for the year, although this has not been encountered for aggregate data. Similarly, in computing "inventory turnover," practices vary in using beginning inventory, ending inventory, or an average of beginning and ending.[23] The same thing has been encountered in connection with the ratio of "profits to net worth."

Any substantial change in the balance sheet item between statement dates can mean considerable differencs among the same ratios computed by the different methods suggested above. Where only the most recent balance sheet is available, there is no choice. From the viewpoint of simplicity, there is little question that only the latest balance sheet data should be used. Beyond this point, however, it is difficult to find unanimity of opinion, except that once a choice is made, any subsequent comparisons should be made on a consistent basis. The practice of individual analysts may be conditioned by the decisions of those who compile the industry data, since comparisons of individual firm data to those of the industry lose their significance when different methods are used for compu-

[23]Malcolm P. McNair, **Operating Results of Department and Specialty Stores in 1958**, Harvard Business School, June 1959, computes an inventory turnover based both on average of beginning and ending inventories and on average monthly inventory. See p. 85.

tation of the ratios. The compiler, in any event, can be helpful by explicitly defining the method of computation.

CONCLUSION

The main purpose of this paper has been to isolate, define, and illustrate the basic problems encountered in the development and use of published financial and operating ratio data. In general terms, one might summarize the criteria for such data as follows: 1) The ratios which are compiled should be significant, and not a random exercise in mathematical manipulation. 2) Very careful consideration must be given to the problem of defining the industry and its subclassifications so that reliable and valid samples may be obtained. 3) All terms used should be explicitly and carefully defined for users of the data and any limitations upon the sample should preferably be indicated if their value is to be optimized.

A useful contribution can be made by this research study if it applies the basic criteria suggested in this paper to a searching evaluation of existing published ratio data, with an eye to improving their usefulness, as well as to developing standards and techniques of compilation which will be helpful to organizations planning to enter this field in the future. Only a relatively small proportion of private trade associations are presently engaged in the task of compiling ratios, or in supporting their compilation by others. Quite apart from the possibility of government itself entering into the publication of ratios, with the vast resources of already established agencies at its disposal, it would appear that the greatest potential lies among the several thousands of trade associations in this country.

Merchandising and the Structure of Social Values

by KARL H. STEIN*

The article explores the relationship between merchandising and the social value structure. Interpreting merchandising as a matrix, measure and molder, as well as a melting pot of social value, it concludes that the relationship is reciprocal. Implications are indicated for the social scientist, the ordinary citizen and the merchandiser.

THE functional activities of different groups take place within the framework of the society of which they are a part. This framework sets limits as well as standards for these activities. At the same time these activities act as molecules, the incessant movement of which within an apparently stable framework constantly rebuilds and modifies it. The framework of society has many parts which, though interlocked in fact, may be analyzed separately. There are, for example, society's political traditions and institutions, its economic processes and the institutions through which they function. There is a structure of social values which manifests itself in ideas on social justice, education and the priority of life goals; in short it is evident in attitudes toward most basic questions of social ethics and individual aspirations which every society and its members face.

Among the influences which shape society's value structure are its history, religion, geophysics and other ecological factors. There are probably few group or individual activities which are not decisively affected by society's value structure, whether in the realm of political or economic behavior or even in the field of scientific endeavor. Among the activities which illustrate the molecular movement pulsing below the surface of this structure are those of merchandising.

THE CONCEPT OF MERCHANDISING

Merchandising is the process of fitting products to people and people to products. It provides ideas for the embodiment of utilities in products and services, and for the conversion of raw materials into marketable finished goods. Merchandising seeks clues to potential demands for products and translates them into strategems for mobilizing this demand into buying action. Merchandising adjusts products to people through physical design. It adjusts people to products through psychological rapport.

There are many ways in which society's value structure is expressed. For example, it is evident in the laws and institutions which provide for the weaker members of society; in scientific achievement, artistic accomplishment and military prowess; in the quality of human relationships. Further evidence of the value structure may be inferred from society's consumption behavior. It reflects the thinking and feeling and the attitudes and preferences of society and, thus, its value structure. At the center of this process are the activities of those who provide the necessary link between consumers and producers in a free competitive economy, the merchandisers.

In the process of selling satisfactions in the forms of goods and services, to be effective merchandising must be sensitive to the prevailing tenor of the social value structure. At the same time, however, through the formulation of suitable sales appeals the merchandiser helps to shape this value structure.

Merchandising, in this sense, should

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not be equated with marketing, the functions of which are broader. Merchandising, for example, excludes the physical handling of products in storage and transportation. It excludes decisions concerning the channels of distribution to be selected. Neither does it cover personal selling nor many phases of advertising. Merchandising does involve determination of actual and latent consumer wants[1] and decisions as to the quality and variety of styles which will meet these wants.[2] Merchandising includes branding, packaging, display and other forms of presentation of goods.[3] It also involves the use of innovation to gain competitive advantage.[4]

Historical Changes in Merchandising Functions

As might be expected, the way these constituent activities of merchandising have been carried out has changed over the years. Under primitive custom production to order, no elaborate system was needed for determining product quality or variety of styles. This was simply a matter of individual inquiry and order. Brands merely identified the manufacturer or source of the product. The package protected the product physically and, in some cases, provided a measure of quantity. Display served the convenience of stock keeping. Innovation was slow of acceptance by buyers and sellers alike.

As geographic boundaries receded and producers became separated from consumers through interjection of specialized distributive agents and more complex production processes, more systematic market research was called for to discover potential areas of consumer demand.[5] Branding, far from merely identifying the manufacturer, endowed the product with a recognizable, semi-autonomous status in the proliferating mass media and thus in the minds of potential consumers. Packaging, besides fulfilling the needs of serviceable transit and storage, had to satisfy a wide range of psycho-physical reactions of human perception and emotion.[6] Display became a scientific selling aid, if not a selling substitute. Innovation whether basic or superficial became the core of competition.[7]

These changes in the functions of merchandising were instrumental in intensifying the nexus between merchandising and the value structure of society. The need for mass distribution required an aggregative viewpoint. The growing gulf between producer and consumer necessitated systematic exploration, stimulation and exploitation of latent consumer demand. This involved closer attunement of merchandising with prevailing social forces. As merchandising began to embellish the mere physical transfer of goods with an aura of psychological associations, its opportunities for contributing something of its own to the development of society's value structure grew. Merchandising thus became a matrix, measure and molder as well as a melting pot in relation to the social value structure.

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[1] "To ascertain the characteristics of the merchandise for which there is a potentially profitable demand . . . what to make, how much, at what time and at what price." M. T. Copeland and E. P. Learned, **Merchandising of Cotton Textiles,** Harvard Graduate School of Business Administration, Boston, Mass., 1933, p. 1.

[2] It includes "activities which assist in moving goods to consumers . . . including determination of variety of styles and quality." H. E. Agnew and D. Houghton, **Marketing Policies,** McGraw-Hill Book Co., New York, N. Y., 1948, p. 1.

[3] Merchandising includes "all adjustments made in goods and their presentation to meet potential consumer and user needs and desires . . . packaging, branding, and display at strategic points to stimulate consumer interest." E. C. McGary, "Some Functions of Marketing Reconsidered" in W. Alderson and R. Cox, editors, **Theory in Marketing,** Richard D. Irwin and Co., Chicago, Ill., 1950, pp. 270-271.

[4] "The use of strategy by buyers and sellers (other than the ultimate consumer) . . . in order to secure the advantages of innovation." E. A. Duddy and D. A. Revzan, **Marketing,** McGraw-Hill Book Co., New York, 1954, pp. 23-25.

[5] Cf. L. O. Brown, **Marketing and Distribution Research,** Ronald Press, New York, N. Y., 1955, pp. 14-18.

[6] Cf. L. Cheskin, **How to Predict What People Will Buy,** Liveright Publishing Co., New York, N. Y., 1957, **passim.**

[7] Cf. K. Laird, "New Products, New Ads, New Brand Loyalties," **Printer's Ink,** July 2, 1954, p. 23-25.

MERCHANDISING, MATRIX OF SOCIAL VALUES

Every society has certain basic choices to make. It has a certain potential store of physical materials and technology, and a reservoir of human energy and the ability to apply to these. The decision as to what to make, how much, at what time and price, at the macro- rather than the microeconomic level shows merchandising as a matrix of social valuation. In a market-oriented economy, the ultimate will of the consumers impresses itself upon the producers by virtue of the purchasing power of the former and the profit incentive of the latter. Certain other decisions on the allocation and distribution of resources, especially to public purposes, are achieved politically—in a democracy through representative government. Whichever method is employed for decision making, the allocation between the economy's private and public sectors, between investment in defense and social welfare, and between industrial and consumer products reflects the over-all values of society. The space conquest race, for instance, beyond its national survival motivation, indicates a preference for national techno-scientific leadership over greater emphasis on public services, or leaving greater disposable income in the hands of individual consumers.[8]

Merchandising however reflects more than society's basic choices in resource allocation. Its demand-stimulating activities reveal another dimension of the social value structure. The linkage between the consumption of scores of goods and services, by means of appropriate sales promotional appeals, to the attainment of health, happiness, romance[9] and social acceptability[10] testifies not so much to society's need for these products as to its amenability to believing that their use will lead to the attainment of major life goals.

Merchandising also represents a matrix of themes of current social interest. Presently, Hawaiian themes abound.[11] Similarly the St. Lawrence Seaway has already lent its name to hotels, dry cleaning establishments and a multitude of other enterprises.[12] The jet and space age are characterized by design as in fins and jet symbols at the front and rear of automobiles, and "space" oriented advertising copy.

MERCHANDISING, MEASURE OF SOCIAL VALUES

Merchandising involves product determination in relation to potential markets. All societies, democratic or authoritarian, tend to develop differentiated layers of folkways (even though their hierarchical sequence is sometimes subject to disagreement). These differences are articulated in every facet of behavior ranging from dress, speech and sex to food and shelter, and in work as well as in play.[13] Merchandising efforts and activities contribute to delineating the characteristics of social subgroups. By adjusting physical product characteristics as well as psychological product

[8]Low-priced antibiotic exports by Communist nations to the uncommitted countries in South-east Asia, for example, have been interpreted as showing their desire to prove Communism's success in social betterment as against the West's emphasis on military aid. Cf. J. E. Bishop, "Drug Offensive," **Wall Street Journal,** August 6, 1959, p. 1.

[9]A recent collection of custom-made women's gloves which was said to bear "the unmistakable imprint of romance" included one style named "Rose" and another "The Love Glove." One shopper actually returned to the store to report her romantic success on a cruise. See **New York Times,** August 8, 1959, p. 11.

[10]Cf. **One Hundred Good Advertising Headlines and Why They Are Profitable,** Schwab and Beatty Inc., New York, N. Y., 1958.

[11]Cf. for example **Life** magazine, Vol. 46, No. 25, 1958, p. 23.

[12]**Wall Street Journal,** July 28, 1959, p. 2.

[13]Cf., for example, P. Martineau, "Social Classes and Spending Behavior," **Journal of Marketing,** Vol. 23, No. 2, October 1958, pp. 121-130, and R. Denney, "The Leisure Society" **Harvard Business Review,** Vol. 37, No. 3, May-June 1959, pp. 46-60. Blue jeans, now considered a badge of delinquency, have lost popularity with parents and teachers as a garb for their wards. Cf. "Blue Jeans Lose Popularity," **New York Times,** Aug. 19, 1959, p. 32.

appeals to specific market segments,[14] merchandising takes the measure of the value structures of constituent layers of society.

MERCHANDISING, MOLDER OF SOCIAL VALUES

In its innovational role, merchandising not only seeks competitive advantage, it also seeks to mold the tastes of the public to which it caters. The process of discovering latent consumer desires makes merchandising appear more passive than it is in reality. Laboratories hatch technical innovations. Taste makers, high on the social scale, and faddists lower down provide initiation for change.[15] But ultimately the risk taken by the mass merchandiser on his product's and its promotion's public acceptability sets the scene for the expression of evolving social values. Exposure to mass produced designs shapes public taste. The late Frank Lloyd Wright occasionally reminded merchandisers of their high responsibility to the encouragement of "good" design, apart from financial returns. This apparent conflict, however, can be resolved usually by giving each market segment what it prefers within the limits of economic production and distribution. The paperback book field, ranging as it does from romances and mysteries, to "do-it-yourself" literature and from reprints of classics to parallel editions of current best-sellers, provides a successful case history of this.

Merchandising also helps to shape society's value structure by its self-imposed restraints and its standards in its relationships with suppliers, competitors and customers. In this respect it has a choice of abiding by the letter of present legislation or living up to its spirit, or even going out of its way to accept the responsibilities which come to it as a dominant user of the mass media, subscriber to much industrial research and design and developer of commercial real estate.

MERCHANDISING, MELTING POT OF SOCIAL VALUES

Imagination is the tool of effective merchandising. It knows no bounds of space or time to curb its search for the new or at least the half-forgotten. Flapper days were reborn in last year's women's chemise-style. The present Continental-look for men goes back to Edwardian days. All this is staged against a backdrop of outright modernity.[16] Natural fibers are beneficiated by the addition of man-made substitutes.

"Scrambled merchandising" presents unrelated lines for heightened impulse buying effect. The popularity of foreign travel makes imported merchandise sought after by the masses.[17] Thus, merchandising presents a melting pot of ideas, goods and services taken out of the context of their time and place and combined for sales effect.

But merchandising provides a melting pot in another sense. Market segmentation differentiates groups sufficiently so that their members may wish to cross class lines. In a free society there is no visible bar to anyone transcending the confines of his class mores. A woman of the lower middle class may have a sense of discomfort when shopping in a store catering to a higher social stratum;[18] but no one keeps her out. Conspicuous automotive consumption is visible among groups who can least afford it. Partly for this reason, some of the old, standard-sized, low-priced models have taken on airs.

Thus merchandising, although scrupulously catering to class differences, has to cut right across them because of the

[14]For some extreme examples of this in the fields of housing and home decoration, see V. Packard, **The Status Seekers**, D. McKay Co., New York, N. Y., 1959, pp. 70-77.

[15]Cf. R. Meyerson and E. Katz, "Notes on a Natural History of Fads," **American Journal of Sociology**, May 1957, pp. 595-601.

[16]Cf. **New York Times**, Aug. 16, 1959, Section 6, p. 68. ff.

[17]Cf. **New York Times**, Aug. 16, 1959, Section 1, pp. 11, 13.

[18]Cf. P. Martineau, **op. cit.** p. 121.

fluidity and mobility of society.[19] Infusing ideas both from ahead of and behind the time, from close to home as well as abroad, merchandising becomes a catalyst in the melting pot of social values.

IMPLICATIONS

There are implications here for the social scientist, the ordinary citizen and for the merchandiser himself.

For the social scientist, the concept of merchandising as a matrix of social values will put into clearer perspective other aspects of the value structure and point up certain interrelationships. It may stimulate investigation of such questions as whether ways can be found for perfecting society's decision-making process on basic resource allocation, and to what extent a process of atrophy may be taking place in the effectiveness of present sales appeals. As a measure of social values, merchandising has given the social scientist a refined yardstick for assessing a significant dimension of individual and group differences. The idea of merchandising as a molder of social values may stimulate the search for the effects of business decisions on culture. Finally, use of the concept of merchandising as a melting pot of social values may make it possible to trace periodicities of ideas and mores and to observe a gradual blurring of old class lines while new ones are being formed.

To the ordinary citizen, the matrix concept of merchandising will be helpful in promoting understanding of the significance of his consumption behavior as a series of choices which he makes between present and future enjoyment, between a greater sense of national security and individual comfort. He may learn to appreciate more clearly the ways which are open to him in a free society for expressing his preferences in these matters and perhaps for improving the process of decision-making itself. The matrix may also act as a mirror which is held up to show to what extent he permits himself to be manipulated in his personal consumption choices by extraneous appeals which are not functionally part of the product. This may lead to more rational decisions, or at least a realization of the non-rational nature of many of the choices made. Merchandising as a measure of social values will help him to gauge his place on the scale of social groups. This may lead him either to cut over the traces encouraged by the melting pot ideal or to be satisfied with his lot, or again to become an eclectic of social values and, thus, to defy sociological categorization. The idea of merchandising as molder of social values may either warn him or please him. In any event such thinking will have increased his social awareness and will have enriched his personal experience.

The merchandiser will not have to retire from the hustle and bustle of the market in disgust, having his social influence brought to his attention. In a market economy his imperatives must remain profit-oriented because this assures at the same time his responsiveness to the sovereign consumer and the investor, with expectations of a return for his risk and non-consumption. The matrix concept of merchandising may lead the merchandiser to search for new approaches to product design and innovation, as well as to promotional appeals in line with a changing social climate. The idea of merchandising as a measure of social values may make him more aware of the need for careful market segmentation, while the prospect of a melting pot points up the fact that these segments are unlikely to remain static. As for the role of merchandising as a molder of social values, the realization of the effects of his actions on the development of society's value structure will add an important factor to the merchandiser's equation of variables for decision-making and one that,

[19]Cf. S. M. Lipset, "Vance Packard Discovers America." **The Reporter**, July 9, 1959, pp. 31ff. Cites studies by N. Rogoff and S. Goldstein which show the increasing social mobility of the American Society.

with growing social awareness, can be discounted only at the risk of finding the response to his offerings ebbing away.

CONCLUDING OBSERVATIONS

The functional activities taking place within society reflect its value structure. As a movement pulsing below the surface of this structure, it also helps to shape and modify it. Merchandising as the process of adjusting the quality of products and the method of their presentation to latent consumer desires and of stimulating these desires into buying action, illustrates the reciprocal relationship between such activities and the development of the social value structure. A market economy based on mass production and mass distribution reveals merchandising as an index of as well as a powerful influence upon society's structure of values.

As a matrix of social values, merchandising is indicative of society's basic choices in resource allocation. It also shows what psychological associations help to impel the public in its consumption decisions. As a measure of social values, merchandising serves to delineate the folkways of different subcultures within society. Merchandising not only records, it also molds public tastes by ordering the mass production of certain designs and by accepting responsibility for the standards it maintains in its relations with suppliers, competitors and customers alike. Finally, merchandising acts as a melting pot, breaking down lines between past and present, domestic and foreign and between different merchandise categories and the ways in which they are presented. It also leads to crossing social group lines—in its avid search for new approaches to the stimulation and satisfaction of consumer appetites.

This interpretation of merchandising sharpens certain tools of analysis of the social scientist. It may lead the ordinary citizen to a greater awareness of the choices which face him and may make the merchandiser more conscious of the social impact of his decisions.

The New Food Distribution Center: A Case Study in Market Planning

by CLAIR J. REILLY*

Prior to 1959 food wholesaling was centered in the old Dock Street food market area in Philadelphia. Today that area is being redeveloped and the food wholesalers are moving to a new, integrated food market center in South Philadelphia.

With respect to the new Food Distribution Center, this article shows: (1) the benefits of efficient performance of the functions of food enterprises, (2) the nature of wholesaler gravitational forces, and (3) the results of cooperative planning and promotion of private enterprise and city government.

FOOD wholesalers seem to profit from centering in a common location. Wholesalers tend to cluster together because they benefit by offering goods to buyers at one place. In this way buyers can compare the offerings of many merchants at one market place. The food wholesaler and those in allied businesses also benefit from this clustering through greater efficiency in the transportation, porterage, cartage, handling, storing, and the processing that takes place in a planned market center in an accessible location.

In order to understand the savings that result from the efficient performance of the activities of the food enterprises, one may examine the functions and compare the costs of their performance at Philadelphia's old Dock Street market with those at a new food distribution center. This was done in a study by the United States Department of Agriculture entitled, **Wholesale Food Distribution Facilities For Philadelphia, Pennsylvania.**[1]

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[1]U.S. Department of Agriculture, Agricultural Marketing Service, **Wholesale Food Distribution Facilities For Philadelphia, Pa.**, Marketing Research Report No. 201, U.S. Government Printing Office, Washington, D.C., March 1958.

Information about Sources of Supply

In appraising the wants and needs of retailers, it is necessary that wholesalers have knowledge of the many scattered sources of supply from which goods are purchased for retailers. Wholesalers also must have information about the demand for goods by ultimate consumers who are the retailers' customers.

In order to assemble goods in one area, Philadelphia wholesalers buy foods from the 50 states and many foreign countries, including Holland, Switzerland, Brazil, and Norway. According to a study of the United States Department of Agriculture, an estimated 159,100 carloads of food products (which is an average of 436 carloads per day) with an estimated value of nearly $1 billion were handled by Philadelphia food wholesale middlemen in 1953.[2] These goods were transported by rail, truck, ship and plane to market areas in Philadelphia.

Transportation

Transportation pertains to the physical movement of goods from sources of supply to market areas and consumers. It is important that goods reach market areas in accord with demands of customers.

About two-thirds of the food wholesale establishments in Philadelphia before 1959 were located in and around the Dock and Callowhill Streets markets on the Delaware River. Many of the food merchants in this area lacked rail connections, which meant that goods had to be carted over considerable distances from the tracks to the establishments. Also, the almost unbelievable traffic congestion in that area caused by the narrow street arteries leading to and from the dilapidated structures at Dock Street slowed traffic and added to the costs of doing business.

The efficiency of transportation sys-

[2]**Ibid., p. 1.** This and the subsequent statistical information used herein comes from this source unless otherwise noted.

tems in getting the goods from sources of supply to the Philadelphia market area will be about the same in the future in the new market area. However, there will be one major improvement in that railroad spurs can be run behind the new food center buildings. If done, this would permit greater efficiency in handling the goods after they reached the market.

Cartage

Cartage is a technical term used to describe the handling of the products from the railroad car. The definition of the term according to the U.S. Department of Agriculture study, is as follows:

> "The term 'cartage' includes the unloading of products from a railroad car onto a motortruck at the team track, transporting the load to the wholesaler's store, and unloading it into the store at the first-floor level. It may also include the loading of a truck at one wholesaler's store, transporting it to another wholesaler's store, and unloading it onto the side walk or store platform or into the store at the first-floor level, but it does not include the carting of products from the wholesale establishment to retail store or other outlets."

The U.S. Department of Agriculture study estimated,

> " . . . . that in 1953 cartage, as thus defined, was incurred on 17,765 carlot equivalents of the seven types of commodities studied at a total cost of $1,194,368, or an average of $67.25 per car."[3]

Porterage

Porterage generally refers to the unloading of merchandise onto the platform of the wholesale establishment. The term is defined in the Department of Agriculture study:

> "The term 'porterage' applies to the unloading of supplies from a truck or rail car onto the platform or first floor of a wholesale store, and loading out supplies from the first floor or platform of a wholesale store onto a truck for hauling them away. This cost does not cover any volume on which cartage cost may have included the porterage."

The U.S. Department of Agriculture study,

> " . . . . estimated that in 1953 porterage was incurred on the 68,530 carlot equivalents, some of which incurred such costs more than once, at a total cost of $1,902,432, or an average of $15.29 per carlot handled."[4]

Storage

Because of lack of space and refrigeration losses were incurred in fruits and vegetables, poultry and eggs, seafood, and meats resulting in spoilage, deterioration, breakage and shrinkage. These losses for a 51,740 carlot equivalent in 1953 were estimated by the U.S. Department of Agriculture to be $3,456,294.[5]

Internal Handling

Handling refers to the in-plant movement of goods. Since the structures at Dock Street were not designed to permit efficient internal moving, the U.S. Department of Agriculture estimated costs of excessive handling for 1953 at $935,432.[6] (See Table 1.)

Selling and Buying

Selling and buying refer to the negotiation activities that take place in the market. The conveniences offered by a market place attract sellers and buyers.

Because of the traffic congestion, inadequate buildings (many lacked adequate space, elevators, mechanical handling equipment, and refrigeration), inadequate sanitation, unregulated operating hours, and split operations, many buyers were discouraged from buying rather than encouraged to buy from the wholesale middlemen in the Dock Street area. In fact, because of these inconveniences, many potential buyers bypassed the Dock Street Markets.

The food distribution center is a type of "Merchandise Mart." Because of the integration of such activities as storage, processing, and other wholesaling functions at one market location, many markets can now be served effectively. In addition to the Metropolitan Philadelphia Market, the regional market with 22 million people within a ninety-mile radius of Philadelphia, and the Eastern

[3]Ibid., p. 17.

[4]Ibid., p. 18. [5]Ibid., p. 18. [6]Ibid., p. 18.

TABLE 1

Summary of Selected Marketing Costs for 340 Wholesalers in Philadelphia, Pa., for 1953, and Estimated Savings in Costs for This Group Which Would Result from the Development of a New Food Center, by Type of Commodity

Type of commodity	Cartage	Porterage	Cost of excessive handling within buildings[1]	Loss from spoilage, deterioration, shrinkage, or breakage	Rentals[2]	Total	Savings as a percentage of total
1953 Costs							Percent
Fresh fruits and vegetables	$620,860	$763,470	$143,250	$1,117,350	$490,000	$3,134,930	.....
Poultry and eggs	0	174,336	11,520	273,184	78,200	537,240	.....
Seafoods	1,250	37,125	5,000	200,000	79,000	322,375	.....
Meats and meat products	300,000	418,750	270,000	1,865,760	540,000	3,394,510	.....
Butter and cheese	72,000	31,800	16,000	(3)	64,300	184,100	.....
Dry groceries	92,871	307,607	354,900	(3)	395,000	1,150,378	.....
Frozen foods	107,387	169,344	134,400	(3)	190,500	601,631	.....
Total	1,194,368	1,902,432	935,070	3,456,294	1,837,000	9,325,164	.....
Estimated Savings							
Fresh fruits and vegetables	$546,860	$384,230	$143,250	$558,670	+$ 11,920	$1,644,930	51.73%
Poultry and eggs	0	78,430	11,520	139,650	−57,040	172,560	5.43
Seafoods	1,000	18,563	5,000	100,000	+4,560	129,123	4.06
Meats and meat products	255,000	105,000	270,000	186,576	−133,350	683,226	21.49
Butter and cheese	57,600	7,920	16,000	(3)	−46,100	35,420	1.11
Dry groceries	79,101	83,000	354,900	(3)	−125,080	391,921	12.32
Frozen foods	107,387	27,100	134,400	(3)	−146,188	122,699	3.86
Total	$1,046,948	$704,243	$935,070	$984,896	−$491,278	$3,179,879	100.00%

Source: U.S. Department of Agriculture, Agricultural Marketing Service, **Wholesale Food Distribution Facilities For Philadelphia, Pennsylvania.** Marketing Research Report No. 201, U.S. Government Printing Office, Washington, D.C., March 1958, pp. 20, 57.

[1]These figures represent the costs of only what was considered to be excessive handling within buildings—not the total cost of handling within buildings.

[2]Costs, rental values of buildings occupied by 8 wholesale handling organizations were not available; these figures apply to a total of 332 independent wholesalers; savings, the savings on rentals cover only the 310 independent wholesalers for whom space is provided in multiple store buildings in the proposed food center.

[3]These losses were insignificant.

Seaboard market of 56 million people within a 500-mile radius of Philadelphia both can be served by food merchants from this strategic market place.[7]

As shown in Table 1, over three million dollars could be saved annually on five selected marketing cost items by 340 wholesalers at a new food center and presumably will be realized at the new market. Most of these savings will occur through improved efficiency in transportation, porterage, cartage, internal handling, and storage. The wholesaler, retailer-customer, farmer, and consumer all will benefit from these savings. The accessibility of the food center, for example, will attract more buyers and suppliers. Buyers are already coming from Syracuse, New York, (by-passing the New York City market), and Altoona, Pennsylvania. The wholesaler should also derive advantages through the necessity for spending fewer man-hours in the conduct of his business. Because of improved efficiency in performing the wholesaling activities and control over the hours of business transactions, fewer employees are needed per establishment. Finally, the consumer will benefit through more sanitary conditions and from greater merchandise selection and lower costs.

GRAVITATION OF FOOD ENTERPRISES

The development of the Food Distribution Center at Pattison Avenue East is likely to result in an economic transformation of South Philadelphia. An estimated 70 percent of the produce and seafood wholesalers already occupy space, after moving from the old Dock Street market.[8] As noted above, these food wholesalers will now benefit by greater efficiency in the functions that are performed in food wholesaling.

[7]Food Distribution Center Corporation, **Fourth Annual Report,** Philadelphia, Pa., May 1959, p. 3.

[8]Charles MacNamara, "A Peachy New Food Center Replaces Dock Street Lemon," **Greater Philadelphia,** June 1959, p. 19.

These benefits are likely to attract food processors as well as other food wholesalers. According to William C. Crow, chief of the Transportation and Facilities Branch of the United States Department of Agriculture, allied industries that are likely to gravitate toward the area include coffee, tea, and spice dealers; candy and beverage dealers; bakeries; restaurants; and commissaries and manufacturers' branch houses.[9] The gravitational pull of attraction of related enterprises is already being felt. If the seafood and produce market area of the food distribution center can be considered as the core, the center of gravity, then many other businesses have already been attracted. Banana processing plants, a bakery and commissary, supermarket warehouse, tomato packing plants, frozen seafood warehouse, motels, banks, and gasoline stations, for example, all are available now or will be found close at hand in the near future.

The concentration of food wholesalers and allied business in areas that are in close proximity to each other, then will pull customers into the Food Distribution Center. Retailers, for example, will be able to compare the offerings of the fresh fruit and vegetable merchants with a minimum of effort since they are located in buildings adjoining each other. In addition, buyers as well as sellers like the ease of entry and exit that the almost unparalleled arteries of transportation provide for this area. In the future the Delaware Expressway will add to the traffic network which already includes the Walt Whitman Bridge and the Schuylkill Expressway. The aggregation of conveniences, then, has been vital to seller and buyer movements in the food center area.[10]

Cooperative Promotion

The development of the food distribution center in South Philadelphia is an outstanding example of planning and promotion by private and governmental agencies. The Greater Philadelphia Movement sponsored the comparative cost study conducted by the Department of Agriculture, discussed above. The Food Distribution Corporation was then established to supervise the development of the market and the Greater Philadelphia Movement provided $300,000 to initiate its operations. Both the City Planning Commission and the Redevelopment Authority cooperated to make land available and, according to the Capital Budget, the City of Philadelphia will make many additional improvements which will result in further increases in the efficiency of its operation. Many banks also have aided in financing this development.

CONCLUDING OBSERVATIONS

Sellers, buyers, consumers, and the city all benefit from a planned food wholesale market that aids businesses in performing activities on a more efficient basis. Effective performance of activities such as porterage, cartage, handling, and storage, for example, at an integrated food market in an accessible location help to reduce costs. The new food distribution center in South Philadelphia opened June 22, 1959. It is too early to compare this center with characteristics of an efficient market place. Cartage and rental costs, for example, may discourage some merchants from moving into this center. However, a factor that is likely to attract buyers and sellers is its convenience. The conveniences that such a market area affords will continue to attract a greater number of sellers and buyers which should increase volume and, hence, efficiency of operations. Finally, much of the Eastern Seaboard market of the United States can be served from this location.

In addition, the cooperative planning and promotion of the city government and private enterprises of Philadelphia provide an example that other cities could well copy to benefit from a planned food wholesale market center.

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[9]Received in a letter to the writer from William C. Crow, in August 1959.

[10]For further development of the gravitational concept see, Clair J. Reilly, "The Changing Retail Structure of Metropolitan Regions," **Economic and Business Bulletin**, Vol. 10, No. 1, (Sept. 1957) p. 3 ff.

Philadelphia Business Index

The September 1950 issue of the Bulletin presented a new index of general business conditions in the City of Philadelphia. This series, prepared and since maintained by Robert T. Kline, was designed to reflect economic activity exclusively within the boundaries of the City of Philadelphia. It was originally based upon a combination of statistical data representing (1) industrial electric power sales; (2) indexes of employment and employee-hours; (3) department store sales[1]; (4) bank debits[2]; and (5) total construction. Because the method of reporting certain data is under revision by the originating agencies, the change in average weekly hours worked and the monthly change in total employment in the Philadelphia metropolitan area, both prepared by the Department of Research of the Federal Reserve Bank of Philadelphia, have been substituted for (2) above. This is a temporary expedient to maintain continuity of the index. The original data series will be restored after revision.

The following table presents the index for the years 1939 through 1958, and by month from September, 1958.[3]

Index of General Business Conditions, City of Philadelphia, 1947=100

Year	Index	Month	Index
1939	73	1958	
1940	77	Sept.	132.4
1941	96	Oct.	132.5
1942	99	Nov.	130.8
1943	106	Dec.	130.6
1944	106		
1945	98		
1946	100	1959	
1947	100	Jan.	130.5
1948	103	Feb.	132.2
1949	97	Mar.	132.2
1950	108	Apr.	136.5
1951	111	May	142.3[1]
1952	111	June	142.0
1953	119	July	140.1[2]
1954	119	Aug.	139.3
1955	124	Sept.	138.5e
1956	128		
1957	130		
1958	128		

p=preliminary
e=estimated. Based on currently published weekly indicators.

[1]The revised index of Department Store Sales, published by the Federal Reserve Bank of Philadelphia, has been used in the composite index since October, 1951. Beginning September, 1957, the new seasonally adjusted Department Store Sales series (1947 = 100), published by the Philadelphia Federal Reserve Bank, has been used.

[2]The revised Wholesale Price Index, all commodities, published by the BLS, is used beginning January, 1952 as a deflationary index for the Bank Debit Series.

[1]The large increase for May over April is primarily due to an increase in Commercial Power and Light Sales. In fact, this increase is further felt in June and July, where Commercial Power and Light Sales reached an all time high. The Edison Electric Institute attributes these new highs to increased use of air conditioning equipment because of unusually hot weather along with growth in demand.

[2]The drop off in July is due to a severe decline in freight car loadings and construction, apparently caused by the steel strike, which is also reflected in the estimates for August and September.

[3]Kline, Robert T., "A Measurement of General Business Conditions in the City of Philadelphia." **Economics and Business Bulletin,** Temple University School of Business and Public Administration, Philadelphia, Pa., September, 1950, pp. 33-40.